

## Solver example

Suppose that you have \$10,000 that you want to invest in two mutual funds for one year. Fund X is a low risk fund with an 8% interest rate and Fund Y is a higher risk fund with a 12% interest rate. How much money should be invested in each fund to earn a total interest of \$1,000?

To find the answer using the Solver:

- 1) Enter the following labels and data into a worksheet:
  - Row labels: *Fund X*, *Fund Y*, and *Total* in cells A2, A3, and A4.
  - Column labels: *Interest earned*, *Amount invested*, *Interest rate*, and *Time period* in cells B1 thru E1.
  - Interest rates: 8% and 12% in cells D2 and D3.
  - Time period: 1 in cells E2 and E3.
  - Total amount invested: \$10000 in cell C4.
  - Enter an arbitrary value (\$0 or leave blank) in cell C2 as the amount invested in Fund X.
- 2) Enter the following formulas:
  - In cell C3, enter the formula  $=C4-C2$  (total amount – amount invested in Fund X) as the amount invested in Fund Y.
  - In cells B2 and B3, enter the formulas  $=C2*D2*E2$  (B2) and  $=C3*D3*E3$  (B3).
  - In cell B4, enter the formula  $=B2+B3$  as the total interest earned. Figure 329 shows the worksheet at this point.

	A	B	C	D	E
1		<b>Interest earned</b>	<b>Amount invested</b>	<b>Interest rate</b>	<b>Time period</b>
2	<b>Fund X</b>	\$0	\$0	8%	1
3	<b>Fund Y</b>	\$1,200	\$10,000	12%	1
4	<b>Total</b>	\$1,200	\$10,000		
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Figure 329: Solver example setup

- 3) Select **Tools > Solver** on the Menu bar to open the Solver dialog (Figure 326).
- 4) Using the *Target cell* field, select the cell that contains the target value. In this example, it is B4, which contains the total interest value.
- 5) Select **Value of** and enter 1000 in the field next to it. In this example, the target cell value is 1000 because your target is a total interest earned of \$1,000.
- 6) Using the *By changing cells* field, select cell C2 in the sheet. In this example, you need to find the amount invested in Fund X (cell C2).
- 7) Enter the following limiting conditions for the variables by using the *Cell reference*, *Operator*, and *Value* fields:
  - $C2 \leq C4$  – the amount invested in Fund X cannot exceed the total amount available.
  - $C2 \geq 0$  – the amount invested in Fund X cannot be negative.
  - $C2$  is an *Integer* – specified for convenience.
- 8) Click **Solve**. The result is shown in Figure 330.